

April 23, 2001

David A. Stutsman  
Thermwood Corporation  
P.O. Box 436  
Dale, Indiana 47523

Re: Registered Operation Status,  
147-13590-00039

Dear Mr. Stutsman:

The application from Thermwood Corporation received on December 11, 2000, has been reviewed. Based on the data submitted and the provisions in (326 IAC 2-5.5), it has been determined that the following industrial equipment manufacturer located at Old Buffaloville Road, Dale, Indiana, is classified as registered:

- (a) Two (2) paint spray booth (SPB#1 and SPB#2) equipped with four (4) high volume low pressure spray guns, using dry paper filters to control particulate emissions venting to the atmosphere via stacks (SPB#1 and SPB#2), respectively).
- (b) One (1) natural gas-fired air makeup unit rated at 3.456 MMBtu/hr vented to the atmosphere.\*
- (c) One (1) natural gas-fired heating unit rated at 0.203 MMBtu/hr vented to the atmosphere.\*
- (d) Seventeen (17) natural gas-fired heating units each rated at 0.20 MMBtu/hr vented to the atmosphere.\*
- (e) Two (2) natural gas fired heating units each rated at 0.12 MMBtu/hr vented to the atmosphere.\*
- (f) One (1) natural gas-fired heating unit rated at 0.10 MMBtu/hr vented to the atmosphere.\*
- (g) One (1) natural gas-fired heating unit rated at 0.08 MMBtu/hr vented to the atmosphere.\*
- (h) Two (2) natural gas-fired heating units each rated at 0.075 MMBtu/hr vented to the atmosphere.\*
- (i) Three (3) natural gas-fired heating units each rated at 0.060 MMBtu/hr vented to the atmosphere.\*
- (j) Four (4) metal inert gas (MIG) welding stations with a maximum wire consumption rate of 0.23 lbs/hr per stations, vented to the atmosphere.\*

\* Note, these units were not included in previous registrations, but emissions are at exemption level.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
  - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
  - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor in a six (6) hour period.
2. Pursuant to 326 IAC 6-3-2 (Process Operations) the particulate matter (PM) from the welding operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

For Thermwood, the hourly process rate is 2,340 pounds (1.17 tons) per hour, which results in allowable PM emission rate of 4.55 pounds per hour.

$$E = 4.10 (1.17)^{0.67} = 4.10 * 1.11 = 4.55 \text{ pounds per hour}$$

Note the maximum PM potential to emit for the welding operation is 0.95 pounds per hour. In order to maintain registration status the facilities total PM potential to emit must be less than 25 tons per year.

This registration is a registration renewal issued to this source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section  
Office of Air Quality  
100 North Senate Avenue  
P.O. Box 6015  
Indianapolis, IN 46206-6015**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source.

Sincerely,

Paul Dubenetzky, Chief  
Permits Branch  
Office of Air Quality  
Original Signed by Paul Dubenetzky

ERG/RB

cc: File - Spencer County  
Spencer County Health Department  
Air Compliance - Scott Anslinger  
Southwest Regional Office  
Permit Tracking - Janet Mobley  
Technical Support and Modeling - Michele Boner  
Compliance Data Section - Karen Nowak

<b>Registration Annual Notification</b>
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This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3).

<b>Company Name:</b>	Thermwood Corporation
<b>Address:</b>	Old Buffaloville Road
<b>City:</b>	Dale, Indiana 47523
<b>Authorized individual:</b>	David A.. Stutsman
<b>Phone #:</b>	812-937-4476
<b>Registration #:</b>	147-13590-00039

I hereby certify that Thermwood Corporation is still in operation and is in compliance with the requirements of Registration 147-13590-00039.

<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

## **Indiana Department of Environmental Management Office of Air Quality**

### **Technical Support Document (TSD) for a Registration Renewal**

#### **Source Background and Description**

Source Name: Thermwood Corporation  
Source Location: Old Buffaloville Road, Dale, Indiana 47523  
County: Spencer  
SIC Code: 3559  
Operation Permit No.: 147-13590-00039  
Permit Reviewer: ERG/RB

The Office of Air Quality (OAQ) has reviewed an application from Thermwood Corporation relating to the construction and operation of an industrial machinery manufacturing facility.

#### **Permitted Emission Units and Pollution Control Equipment**

The source consists of the following permitted emission units and pollution control devices:

- (a) Two (2) paint spray booths (SPB#1 and SPB#2) equipped with four (4) high volume low pressure spray guns, using dry paper filters to control particulate emissions venting to the atmosphere via stacks (SPB#1 and SPB#2), respectively).
- (b) One (1) natural gas-fired air makeup unit rated at 3.456 MMBtu/hr vented to the atmosphere.\*
- (c) One (1) natural gas-fired heating unit rated at 0.203 MMBtu/hr vented to the atmosphere.\*
- (d) Seventeen (17) natural gas-fired heating units each rated at 0.20 MMBtu/hr vented to the atmosphere.\*
- (e) Two (2) natural gas fired heating units each rated at 0.12 MMBtu/hr vented to the atmosphere.\*
- (f) One (1) natural gas-fired heating unit rated at 0.10 MMBtu/hr vented to the atmosphere.\*
- (g) One (1) natural gas-fired heating unit rated at 0.08 MMBtu/hr vented to the atmosphere.\*
- (h) Two (2) natural gas-fired heating units each rated at 0.075 MMBtu/hr vented to the atmosphere.\*
- (i) Three (3) natural gas-fired heating units each rated at 0.060 MMBtu/hr vented to the atmosphere.\*
- (j) Four (4) metal inert gas (MIG) welding stations with a maximum wire consumption rate of 0.23 lbs/hr per stations, vented to the atmosphere.\*

\* Note, these units were not included in previous registrations, but emissions are at exemption level.

### Existing Approvals

The source has been operating under previous approvals including, but not limited to, the following:

- (a) Registration 147-6919-00039 issued August 16, 1996.

All conditions from previous approvals were incorporated into this permit.

### Enforcement Issue

There are no enforcement actions pending.

### Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
SPB#1	Spray Paint Booth	22.231	3	12,770	75
SPB#2	Spray Paint Booth	22.231	3.5	27,365	75

### Recommendation

The staff recommends to the Commissioner that the operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

An application for the purposes of this review was received on December 11, 2000, with additional information received on January 16, 2001 and February 19, 2001.

### Emission Calculations

See Appendix A of this document for detailed emissions calculations (Appendix A, pages 1 through 5)

### Potential To Emit of Source Before Controls

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as "the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the U. S. EPA, the department, or the appropriate local air pollution control agency."

Pollutant	Potential To Emit (tons/year)
PM	4.8
PM-10	4.8
SO <sub>2</sub>	0.02
VOC	7.7
CO	2.9
NO <sub>x</sub>	3.4

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than 100 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.
- (b) The potential to emit (as defined in 326 IAC 2-7-1(29)) of pollutants are less than 25 tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-6.1.
- (c) The potential to emit (as defined in 326 IAC 2-7-1(29)) VOC is greater than levels listed in 326 IAC 2-1.1-3(d)(1), therefore the source is subject to the provisions of 326 IAC 2-5.5.1.
- (d) The potential to emit (as defined in 326 IAC 2-7-1(29)) of any single HAP is less than ten (10) tons per year and/or the potential to emit (as defined in 326 IAC 2-7-1(29)) of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

### County Attainment Status

The source is located in Spencer County.

Pollutant	Status
PM-10	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Spencer County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Spencer County has been classified as attainment or unclassifiable for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

### Source Status

Existing Source PSD, Part 70 or FESOP Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (ton/yr)
PM	4.4
PM10	4.4
SO <sub>2</sub>	0.02
VOC	7.7
CO	2.9
NO <sub>x</sub>	3.4

- (a) This existing source is **not** a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories.

## Part 70 Permit Determination

### 326 IAC 2-7 (Part 70 Permit Program)

This existing source, is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons/year.

This status is based on all the air approvals issued to the source.

## Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs)(326 IAC 14 and 40 CFR Part 63) applicable to this source.

## State Rule Applicability - Entire Source

### 326 IAC 2-6 (Emission Reporting)

This source is located in Spencer County and the potential to emit all criteria pollutants is less than one hundred (100) tons per year. Therefore, 326 IAC 2-6 does not apply.

### 326 IAC 5-1 (Visible Emissions Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings) as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

## State Rule Applicability - Individual Facilities

### 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The operation of industrial machine manufacturing facility will emit less than 10 tons per year of a single HAP or 25 tons per year of a combination of HAPs. Therefore, 326 IAC 2-4.1 does not apply.

### 326 IAC 8-1-6 (New Facilities - General Reduction Requirement)

This source does not have potential VOC emissions equal to or greater than twenty five (25) tons per year, and therefore this source is not subject to the provisions of 326 IAC 8-1-6.

### 326 IAC 6-3-2 (Process Operations)

The particulate matter (PM) from the welding operation and surface coating operation shall be limited by the following:

Interpolation of the data for the process weight rate up to sixty thousand (60,000) pounds per

hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

For Thermwood's welding operation, the hourly process rate is 2,340 pounds (1.17 tons) per hour, which results in an allowable PM emission rate of 4.55 pounds per hour.

$$E = 4.10 (1.17)^{0.67} = 4.10 * 1.11 = 4.55$$

Note the maximum PM potential to emit for the welding operation is 0.95 pounds per hour. In order to maintain registration status the facilities total PM potential to emit must be less than 25 tons per year.

#### 326 IAC 8-2-9 (Miscellaneous Metal Coating)

This rule applies to industrial categories with specific SIC codes, including facilities whose first two digits are 35 and have been constructed after July 1991. The Thermwood coating operation was constructed in 1976, such that this rule does not apply.

#### 326 IAC 8-6-1 (Applicability of Rule)

This rule is applicable for sources that commenced operations after October 7, 1974 and prior to January 1, 1980, located anywhere in the state with potential VOC emission greater than 100 tons per year. Thermwood Corporation was constructed in 1976, but the total potential VOC emissions are 7.7 tons per year, therefore 8-6-1 does not apply.

### Conclusion

The operation of this industrial equipment manufacturing operation shall be subject to the conditions of the attached proposed Registration 147-13590-00039.

Appendix A: Emissions Calculations  
Summary

Company Name: **Thermwood**  
Address City IN Zip: **Old Buffaloville Road, Dale, Indiana 47523-4476**  
CP: **147-13590**  
Plt ID: **147-00039**  
Reviewer: **ERG/RB**  
Date: **March 6, 2001**

Potential Emissions (tons per year)

	PM*	PM10*	SO2	NOx	VOC	CO
Combustion	0.26	0.26	0.02	3.42	0.19	2.87
Welding	4.17	4.17	0.00	0.00	0.00	0.00
Surface Coating	0.39	0.39	0.00	0.00	7.52	0.00
<b>Total</b>	<b>4.82</b>	<b>4.82</b>	<b>0.02</b>	<b>3.42</b>	<b>7.71</b>	<b>2.87</b>

Potential Emissions (lbs per hour)

	PM*	PM10*	SO2	NOx	VOC	CO
Combustion	0.06	0.06	0.00	0.78	0.04	0.66
Welding	0.95	0.95	0.00	0.00	0.00	0.00
Surface Coating	0.09	0.09	0.00	0.00	1.72	0.00
<b>Total</b>	<b>1.10</b>	<b>1.10</b>	<b>0.00</b>	<b>0.78</b>	<b>1.76</b>	<b>0.66</b>

Potential Controlled Emissions (tons per year)

	PM*	PM10*	SO2	NOx	VOC	CO
Combustion	0.26	0.26	0.02	3.42	0.19	2.87
Welding	4.17	4.17	0.00	0.00	0.00	0.00
Surface Coating	0.01	0.01	0.00	0.00	7.52	0.00
<b>Total</b>	<b>4.44</b>	<b>4.44</b>	<b>0.02</b>	<b>3.42</b>	<b>7.71</b>	<b>2.87</b>

Potential Controlled Emissions (lbs per hour)

	PM*	PM10*	SO2	NOx	VOC	CO
Combustion	0.06	0.06	0.00	0.78	0.04	0.66
Welding	0.95	0.95	0.00	0.00	0.00	0.00
Surface Coating	0.00	0.00	0.00	0.00	1.72	0.00
<b>Total</b>	<b>1.01</b>	<b>1.01</b>	<b>0.00</b>	<b>0.78</b>	<b>1.76</b>	<b>0.66</b>

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

## Appendix A: Emissions Calculations

### Natural Gas Combustion Only

MM BTU/HR <100

#### Small Industrial Boiler

Company Name: Thermwood

Address City IN Zip: Old Buffaloville Road, Dale, Indiana 47523-4476

CP: 147-13590

Plt ID: 147-00039

Reviewer: ERG/RB

Date: March 6, 2001

Heat Input Capacity

MMBtu/hr

7.8

Potential Throughput

MMCF/yr

68.4

Emission Factor in lb/MMCF	Pollutant					
	PM*	PM10*	SO2	NOx	VOC	CO
	7.6	7.6	0.6	100.0	5.5	84.0
				**see below		
Potential Emission in tons/yr	0.3	0.3	0.0	3.4	0.2	2.9

\*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

\*\*Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

### Methodology

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Potential Throughput (MMCF) = Heat Input Capacity (MMBtu/hr) x 8,760 hrs/yr x 1 MMCF/1,000 MMBtu

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-(SUPPLEMENT D 3/98)

Emission (tons/yr) = Throughput (MMCF/yr) x Emission Factor (lb/MMCF)/2,000 lb/ton

Note: Check the applicable rules and test methods for PM and PM10 when using the above emission factors to confirm that the correct factor is used (i.e., condensable included/not included).

See page 2 for HAPs emissions calculations.

**Appendix A: Emissions Calculations  
Natural Gas Combustion Only**

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**MM BTU/HR <100**

**Small Industrial Boiler**

**HAPs Emissions**

**Company Name: Thermwood**

**Address City IN Zip: Old Buffaloville Road, Dale, Indiana 47523-4476**

**CP: 147-13590**

**Pit ID: 147-00039**

**Reviewer: ERG/RB**

**Date: March 6, 2001**

**HAPs - Organics**

Emission Factor in lb/MMcf	Benzene 2.1E-03	Dichlorobenzene 1.2E-03	Formaldehyde 7.5E-02	Hexane 1.8E+00	Toluene 3.4E-03
Potential Emission in tons/yr	ERR	ERR	ERR	ERR	ERR

**HAPs - Metals**

Emission Factor in lb/MMcf	Lead 5.0E-04	Cadmium 1.1E-03	Chromium 1.4E-03	Manganese 3.8E-04	Nickel 2.1E-03
Potential Emission in tons/yr	ERR	ERR	ERR	ERR	ERR

Methodology is the same as page 1.

The five highest organic and metal HAPs emission factors are provided above.  
Additional HAPs emission factors are available in AP-42, Chapter 1.4.

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updated 4/99

## Welding and Thermal Cutting

Company Name: **Thermwood**  
 Address City IN Zip: **Old BuffaloVille Road, Dale, Indiana 47523-4476**  
 CP: **147-13590**  
 Plt ID: **147-00039**  
 Reviewer: **ERG/RB**  
 Date: **March 6, 2001**

PROCESS	Number of Stations	Max. electrode consumption per station (lbs/hr)		EMISSION FACTORS* (lb pollutant/lb electrode)				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
WELDING												
Submerged Arc	0	0		0.036	0.011			0.000	0.000	0.000	0	0.000
Metal Inert Gas (MIG)(carbon steel)	4	0.23		0.0055	0.0005			0.005	0.000	0.000	0	0.000
Stick (E7018 electrode)	0	0		0.0211	0.0009			0.000	0.000	0.000	0	0.000
Tungsten Inert Gas (TIG)(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
Oxyacetylene(carbon steel)	0	0		0.0055	0.0005			0.000	0.000	0.000	0	0.000
FLAME CUTTING	Number of Stations	Max. Metal Thickness Cut (in.)	Max. Metal Cutting Rate (in./minute)	EMISSION FACTORS (lb pollutant/1,000 inches cut, 1" thick)**				EMISSIONS (lbs/hr)				HAPS (lbs/hr)
				PM = PM10	Mn	Ni	Cr	PM = PM10	Mn	Ni	Cr	
Oxyacetylene	3	2	15	0.1622	0.0005	0.0001	0.0003	0.876	0.000	0.000	0.000	0.000
Oxymethane	0			0.0815	0.0002		0.0002	0.000	0.000	0.000	0.000	0.000
Plasma**	2	0.375	150	0.0039				0.070	0.000	0.000	0.000	0.000
EMISSION TOTALS												
Potential Emissions lbs/hr								0.95				0.00
Potential Emissions lbs/day								22.83				0.01
Potential Emissions tons/year								4.17				0.00

## METHODOLOGY

\*Emission Factors are default values for carbon steel unless a specific electrode type is noted in the Process column.

\*\*Emission Factor for plasma cutting from American Welding Society (AWS). Trials reported for wet cutting of 8 mm thick mild steel with 3.5 m/min cutting speed (at 0.2 g/min emitted). Therefore, the emission factor for plasma cutting is for 8 mm thick rather than 1 inch, and the maximum metal thickness is not used in calculating the emissions.

Using AWS average values: (0.25 g/min)/(3.6 m/min) x (0.0022 lb/g)/(39.37 in./m) x (1,000 in.) = 0.0039 lb/1,000 in. cut, 8 mm thick

Plasma cutting emissions, lb/hr: (# of stations)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 8 mm thick)

Cutting emissions, lb/hr: (# of stations)(max. metal thickness, in.)(max. cutting rate, in./min.)(60 min./hr.)(emission factor, lb. pollutant/1,000 in. cut, 1" thick)

Welding emissions, lb/hr: (# of stations)(max. lbs of electrode used/hr/station)(emission factor, lb. pollutant/lb. of electrode used)

Emissions, lbs/day = emissions, lbs/hr x 24 hrs/day

Emissions, tons/yr = emissions, lb/hr x 8,760 hrs/year x 1 ton/2,000 lbs.

Welding and other flame cutting emission factors are from an internal training session document.

Refer to AP-42, Chapter 12.19 for additional emission factors for welding.

**Appendix A: Emissions Calculations  
VOC and Particulate  
From Surface Coating Operations**

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**Company Name:** Thermwood  
**Address City IN Zip:** Old Buffaloville Road, Dale, Indiana 47523-4476  
**CP:** 147-13590  
**Pit ID:** 147-00039  
**Reviewer:** ERG/RB  
**Date:** March 6, 2001

Material	Density (Lb/Gal)	Weight % Volatile (H2O & Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Volatiles (solids)	Gal of Mat. (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential (ton/yr)	lb VOC/gal solids	Transfer Efficiency
Gray Hi-build Primer	11.7	28.91%	0.0%	28.9%	0.0%	51.06%	0.87400	0.041	3.38	3.38	0.12	2.91	0.53	0.20	6.62	85%
615S/616S Primer	8.3	75.95%	0.0%	76.0%	0.0%	12.92%	2.05600	0.041	6.27	6.27	0.53	12.68	2.31	0.11	48.50	85%
Centauri 5000 Primer (beige)	10.0	36.07%	0.0%	36.1%	0.0%	51.17%	0.70500	0.041	3.61	3.61	0.10	2.50	0.46	0.12	7.05	85%
Centauri 5000 Primer (white)	12.2	29.67%	0.0%	29.7%	0.0%	70.33%	0.70500	0.041	3.61	3.61	0.10	2.50	0.46	0.16	5.13	85%
Centauri 5000 Primer (yellow)	9.9	36.37%	0.0%	36.4%	0.0%	63.63%	0.70500	0.041	3.60	3.60	0.10	2.50	0.46	0.12	5.66	85%
Centauri 5000 Primer (Gray)	9.4	38.35%	0.0%	38.4%	0.0%	61.65%	0.70500	0.041	3.61	3.61	0.10	2.50	0.46	0.11	5.85	85%
Centauri Activator	8.8	33.22%	0.0%	33.2%	0.0%	60.96%	0.70500	0.041	2.93	2.93	0.08	2.03	0.37	0.11	4.81	85%
WB Spray Booth Coating	9.0	52.10%	47.9%	4.2%	51.6%	0.00%	0.05500	0.041	0.78	0.38	0.00	0.02	0.00	0.01	ERR	85%
LH Lacquer Thinner	6.6	100.00%	0.0%	100.0%	0.0%	0.00%	1.22600	0.041	6.56	6.56	0.33	7.91	1.44	0.00	ERR	85%
Ivent Haptha, Medium Alpha	6.8	100.00%	0.0%	100.0%	0.0%	0.00%	0.00000	0.041	6.76	6.76	0.00	0.00	0.00	0.00	ERR	85%

Booth Potential Emissions

**Add worst case coating to all solvents**

**1.48**

**35.56**

3.76

0.20

Number of Paint Booths

2.00

**State Potential Emissions**

**7.52**

**0.39**

METHODOLOGY

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) \* Weight % Organics) / (1-Volume % water)

Pounds of VOC per Gallon Coating = (Density (lb/gal) \* Weight % Organics)

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (8760 hr/yr) \* (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) \* (gal/unit) \* (lbs/gal) \* (1- Weight % Volatiles) \* (1-Transfer efficiency) \*(8760 hrs/yr) \*(1 ton/2000 lbs)

Pounds VOC per Gallon of Solids = (Density (lbs/gal) \* Weight % organics) / (Volume % solids)

Total = Worst Coating + Sum of all solvents used

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